AMENDMENTS TO CLAIMS

1. (Currently Amended) An isolated type switching power supply apparatus which comprises a power supply, a transformer ~~being~~ connected to said power supply and comprising a core including primary and secondary sides having primary and secondary windings, respectively, and a switching means for switching an electric current going through ~~a~~ the primary winding of said transformer ~~with a switching frequency~~ so that an energy generated on the primary side of said transformer is sent to the secondary side in accordance with the operation of said switching means, the apparatus further comprising:

a modulating means for modulating an output on the secondary side of said transformer; ~~with a modulating frequency which is different from said switching frequency~~;

a transmitting means for transmitting an output of said modulating means through the core of the transformer from the secondary side to the primary side of said transformer;

a demodulating means for demodulating the ~~modulated~~ output transmitted by the transmitting ~~at the primary side, which has been transferred by said transferring~~ means; and

a switching means controlling circuit for controlling said switching means, wherein the operation of said switching means is controlled in accordance with an output of said demodulating circuit ~~; wherein said switching means controlling circuit is provided at the primary side of said transformer~~.

Claims 2-15 (canceled).

16. (New) The apparatus of claim 1, wherein said modulating means includes at least one of a first modulating circuit and a second modulating circuit, wherein each of the first and second modulating circuits includes at least one of amplitude modulation, frequency modulation, phase modulation, pulse width modulation, pulse frequency modulation, pulse amplitude modulation, pulse period modulation, pulse code modulation, spread spectrum modulation and orthogonal modulation capabilities for further modulating the output of said modulating circuit; and

wherein said demodulating means includes at least one of a first demodulating circuit and a second demodulating circuit for demodulating the output of said modulating circuit modulated by at least one of the first and second modulating circuits and transmitted by said transmitting means.

17. (New) An isolated type switching power supply apparatus which comprises a power supply, a transformer connected to said power supply and including primary and secondary sides, a switching means for switching an electric current going through a primary winding of said transformer so that an energy generated on the primary side of said transformer is sent to the secondary side in accordance with the operation of said switching means, the apparatus further comprising:

a modulating means for modulating an output on the secondary side of said transformer;

a transmitting means including a photo-coupler and for transmitting an output of said modulating means through the photo-coupler from the secondary side of said transformer to the primary side of said transformer;

a demodulating means for demodulating the output transmitted by the transmitting means; and

a switching means controlling circuit for controlling said switching means, wherein the operation of said switching means is controlled in accordance with an output of said demodulating means.

18. (New) The apparatus of claim 17, wherein said modulating means includes at least one of a first modulating circuit and a second modulating circuit, wherein each of the first and second modulating circuits includes at least one of amplitude modulation, frequency modulation, phase modulation, pulse width modulation, pulse frequency modulation, pulse amplitude modulation, pulse period modulation, pulse code modulation, spread spectrum modulation and orthogonal modulation capabilities for further modulating the output of said modulating circuit; and

wherein said demodulating means includes at least one of a first demodulating circuit and a second demodulating circuit for demodulating the output of said modulating circuit modulated by at least one of the first and second modulating circuits and transmitted by said transmitting means.

19. (New) An isolated type switching power supply apparatus which comprises a power supply, a transformer connected to said power supply and comprising a core including primary and secondary sides having primary and secondary windings, respectively, and a switching means for switching an electric current going through a primary winding of said transformer so that an energy generated on the primary side of said transformer is sent to the secondary side in accordance with the operation of said switching means, the apparatus further comprising:

an FET for rectifying an output of the secondary winding of said transformer;

a modulating means for generating a pulse width modulated driving signal for said FET at an output, wherein the output of said modulating means is transmitted from the secondary side to the primary side through the core of said transformer;

a demodulating means for demodulating the transmitted output at the primary side; and

a switching means controlling circuit for controlling operation of said switching means, wherein said operation of said switching means is controlled in accordance with an output of said demodulating means.

20. (New) The apparatus of claim 19, wherein the modulating means modulates a timing difference between a driving timing of said FET and a switching timing of said switching means.

21. (New) An isolated type switching power supply apparatus which comprises a power supply, a first transformer connected to said power supply and having primary and secondary sides, and a switching means for switching an electric current going through a primary winding of said first transformer so that an energy generated on the primary side of said first transformer is sent to the secondary side of said first transformer in accordance with the operation of said switching means, the apparatus further comprising:

a second transformer having primary and secondary sides;

a pulse amplitude modulating means for modulating an output of said second transformer at a same frequency as a switching frequency of said switching means in accordance with an output of said power supply apparatus;

a transmitting means for transmitting an output of said pulse amplitude modulating means through said second transformer from the secondary side of the second transformer to the primary side of the second transformer;

a demodulating means for demodulating the output transmitted by said transmitting means; and

a switching means controlling circuit for controlling the operation of said switching means, wherein said operation of said switching means is controlled in accordance with an output of said demodulating means.

22. (New) The apparatus of claim 21 further comprising:

at least one of (i) a load regulation correcting means for detecting an input electric current of said apparatus and correcting a load regulation of the apparatus in accordance with the detected input electric current, and (ii) a line regulation correcting means for detecting an input voltage of said apparatus and correcting a line regulation of the apparatus in accordance with the detected input voltage.

23. (New) An isolated type switching power supply apparatus which comprises a power supply, a transformer connected to said power supply and having primary and secondary sides, and a switching means for switching an electric current going through a primary winding of said transformer so that an energy generated on the primary side of said transformer is sent to the secondary side in accordance with the operation of said switching means, the apparatus further comprising:

a tertiary winding at the primary side of said transformer;

a rectifying means for rectifying an output of said tertiary winding;

a switching means controlling circuit for controlling the operation of said switching means, wherein said switching means controlling circuit controls the operation of said switching means in accordance with the output of said rectifying means; and

at least one of (i) a load regulation correcting means for detecting an input electric current of said apparatus and correcting a load regulation of the apparatus in accordance with the detected input electric current, and (ii) a line regulation correcting means for detecting an input voltage of said apparatus and correcting a line regulation of the apparatus in accordance with the detected input voltage.

24. (New) The apparatus of claim 23, wherein the detection of said input electric current in the load regulation correcting means is performed by detecting a duty ratio of said switching means.